

Abstract of the Disclosure

The measurement of intersubband electroluminescence (ISB-EL) in unipolar quantum cascade lasers is achieved by forming a longitudinal cleave through the active region and waveguide of the QC laser device, exposing a complete side face of the device, including the active region. The conventional laser facets at the entrance and exit of the active region are coated with a highly reflective material and the emission from the exposed side face is measured. In theory, the sideface emission would comprise only the ISB-EL spontaneous emission, but some additional laser emission (due to scattering in the imperfect waveguide structure) also exits along this sideface. Spatial filtering and/or polarization monitoring can be used to differentiate the laser emission from the ISB-EL spontaneous emission.